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| Project Overview page 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Name of Project:** | | | Transforming the Parent Function | | | | | | | | | | | | | | | | **Duration:** | | | 2 Class periods | | | | | | |
| **Subject/Course:** | | | **Algebra 1** | | | | | | | **Teacher(s): Mr. Brooks** | | | | | | | | | **Grade Level:** | | | 9th Grade | | | | | | |
| **Other Subject Areas to Be Included:** | | |  | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Project Idea**  Summary of the issue, challenge, investigation, scenario, or problem: | | | The class will be divided into five groups of 4. Each group will be given calculators and a graph paper. They will each begin with the parent function y = x and be given instructions on how to transform. Using different colors, each group will then graph the parent function and the translations. Finally, on a separate piece of paper, each group will make a brief analysis on the changes that occurred.  When the class meets again, have each group show the graphed equations and discuss the changes with the class. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Essential Question** | | | When a tornado hits a city, what are some of the changes that it could bring to a vehicle? | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Content Standards** to be taught and assessed**:** | | | SPI 3102.1.4 Translate between representations of functions that depict real-world situations.  SPI 3102.1.6 Determine and interpret slope in multiple contexts including rate of change in real-world problems.  SPI 3102.3.6 Interpret various relations in multiple representations. | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | **T** | **A** | **E** |  | | | | | | | | | **T** | | **A** | | | **E** |
| **Professional (21st Century) Skills** to be taught, assessed and/or encouraged**:** | | | Collaboration: Each student will be given a different task | | | | | | | |  |  |  | Other: A brief analysis will be written describing the changes on the parent function. | | | | | | | | |  | |  | | |  |
| Communication (Oral Presentation) | | | | | | | |  |  |  |  | | | | | | | | |  | |  | | |  |
| Critical Thinking/Problem Solving: An analysis will be made of the changes occurring on the parent function. | | | | | | | |  |  |  |  | | | | | | | | |  | |  | | |  |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Major Products & Performances** | Group: | | | The class will be divided into groups of four. Each group will be responsible for a colored graph paper with the graphed functions, and a hand written analysis of the changes occurring on the parent function. | | | | | | | | | | | | | | | | **Presentation Audience**   **Presentation Audience:**      Class   School | | | | | | | | |
|  | Class x | | | | | | | |
|  | School | | | | | | | |
|  | Community | | | | | | | |
| Individual: | | | Each individual will have a task. One student will be responsible for graphing the functions on the calculator. A second will be responsible for graphing each equation on the graph paper. A third will be responsible for describing the changes occurring with the parent function. The fourth will be responsible for making certain that the project is completed and turned in. | | | | | | | | | | | | | | | |  | Experts | | | | | | | |
|  | Web | | | | | | | |
|  | Other: | | | | | | | |
| Project Overview page 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Entry Event** to  launch inquiry,  engage students: | | Have a volunteer stand in front of the class. Ask for four volunteers to request that the student move by turning around, or moving forward/backwards or sideward. Discuss each movement with the class and give the proper name to them (rotation, translation, etc.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Assessments** | | **Formative Assessments**  (During Project) | | | |  | | Quizzes/Tests | | | | | | | |  | | Practice Presentations | | | | | |  | | |
|  | | Journal/Learning Log | | | | | | | |  | | Notes | | | | | |  | | |
|  | | Preliminary Plans/Outlines/Prototypes | | | | | | | |  | | Checklists | | | | | |  | | |
|  | | Rough Drafts | | | | | | | |  | | Concept Maps | | | | | |  | | |
|  | | Online Tests/Exams | | | | | | | |  | | Other: Teacher will move from group to group observing and guiding where necessary. | | | | | |  | | |
| **Summative Assessments**  (End of Project) | | | | x | | Written Product(s), with rubric:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | |  | | Other Product(s) or Performance(s), with  rubric:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |  | | |
| x | | Oral Presentation, with rubric | | | | | | | | x | | Peer Evaluation | | | | | |  | | |
| x | | Multiple Choice/Short Answer Test | | | | | | | | x | | Self-Evaluation | | | | | |  | | |
|  | | Essay Test | | | | | | | |  | | Other: | | | | | |  | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Resources Needed** | | **On-site people, facilities:** | | | | | | | Classroom and desks in groups of four | | | | | | | | | | | | | | | | | | | |
| **Equipment:** | | | | | | | Calculators | | | | | | | | | | | | | | | | | | | |
| **Materials:** | | | | | | | Graph paper and colored pencils. | | | | | | | | | | | | | | | | | | | |
| **Community resources:** | | | | | | |  | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Reflection Methods** | | **(Individual, Group, and/or Whole Class)** | | |  | | Journal/Learning Log | | | | | | | |  | | Focus Group | | | | | |  | | |  | | |
| x | | Whole-Class Discussion | | | | | | | |  | | Fishbowl Discussion | | | | | |  | | |  | | |
|  | | Survey | | | | | | | |  | | Other: | | | | | |  | | |  | | |